



Tuition, Medical and Behaviour Support Service

Curriculum Policy - Primary Mathematics



Reviewed:	September 2020
Next Review:	Will be rewritten in accordance with Subject Development plan by September 2021
Responsibility:	Matthew Brown

Contents

Aims and Principles	Page 3
Planning	Page 3
School Curriculum	Page 3/4
Key Stage 1 overview	Page 4
Lower Key Stage 2 overview	Page 5
Upper Key Stage 2 overview	Page 5
Teaching	Page 6
Assessment and Recording	Page 6
Monitoring and Evaluation	Page 7
Marking Work	Page 7

AIMS AND PRINCIPLES

Our main aims are as follows:

- to support pupils achieving their full potential in mathematics
- to develop pupils' confidence in their mathematical ability
- to support pupils maintaining their progress whilst their main school provision is assessed
- to provide a broad and varied mathematics curriculum, through a variety of teaching approaches and learning situations, to meet the needs of all pupils

We seek to provide this for all pupils, in accordance with our policies on Equal Opportunities and Inclusion and in accordance with our statutory responsibilities under the SEND Code of Practice 2014.

We recognise our responsibility to provide a high quality, inclusive and broad and balanced curriculum for all our pupils that reflects their individual academic needs.

Our Maths Policy follows The National Curriculum 2014 for Math's Guidelines and aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of routine and non - routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

PLANNING

School curriculum

TMBSS follow the National Curriculum 2014 for mathematics, which describes what must be taught in Key Stages 1 and 2. Many pupils attend on a part time basis and the provision is short-term in nature. This means it can be difficult to ensure continuity and progression due to the transient nature of the pupils attending. At TMBSS we recognise that some of our pupils have gaps in their mathematical understanding due to other difficulties they may be facing, and in order to enable them to confidently access the curriculum in their mainstream school it may be appropriate to 'plug the gaps'. As a result, we aim to provide a broad and varied curriculum for all pupils whilst targeting potential barriers to their success in achieving in mathematics.

Where possible, as pupils gain competency with mathematical concepts planning should involve real life contexts for maths, where children are problem solving with a purpose in mind.

Due to the complexities, barriers and interruptions to learning, TMBSS will make judgements about which particular years curriculum is most suitable for each student.

The aim of this is to effectively close the gap, provide targeted, purposeful learning to ensure a broad understanding of the subject.

The programmes of study for mathematics are set out year by year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage, if appropriate. The Primary curriculum overview can be found on the 'Curriculum' section of the TMBSS Website.

Planning begins from a thorough understanding of children's needs gleaned through our baseline assessments and effective and rigorous assessment for learning, combined with high expectations and ambition for all children to achieve.

Medium term planning will outline the areas of mathematics that will be taught during each term to ensure a broad and varied coverage of the National Curriculum. Within two week planning, clear learning objectives should be created. Weekly planning will break this down into further steps, to be completed during the lesson. These steps will form the Success Criteria for the lesson and will be stuck in each pupil's book and completed in line with the TMBSS Marking and Feedback policy. This will show a clear and systematic teaching sequence, where input and activities can be differentiated to meet the individual needs of each pupil.

Key Stage 1 Overview

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key Stage 2 - Year 3 and 4 Overview

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2 - Years 5 and 6 Overview

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

TEACHING

Pupils in Foundation Stage, or pupils who are functioning significantly below the age related expectation in Key Stage 1, are given the opportunity to develop their understanding of number, measurement, pattern and shape and space through short, formal teaching and targeted interventions.

Children will be encouraged to become very competent 'counters' so that their fluency with the number system provides a foundation for mathematical understanding. Counting forwards and backwards in many different sized steps as well as from different starting and ending points is essential.

Maths learning builds from a concrete understanding of concepts where children are manipulating objects. When children are able to see concepts this way, they then need to understand the same concepts represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations.

Children's mental maths is of great importance, with number bonds, times tables facts and various strategies for calculation taught and practiced at school with support sought from parents.

A progression towards efficient written calculations should be developed in each year group. TMBSS does not have a Calculation policy, as we recognise that many pupils attend our provision on a part-time, short-stay basis, meaning pupils are attending from a variety of schools in Shropshire with a variety of different policies. As a result we will endeavour to be sensitive to the pupils' prior learning and methods taught.

Pupils will be set individual targets in mathematics and these will be shared with the children and displayed in an age-appropriate format appropriate for each class. Though the nature of lessons will be very different depending on the needs of the class, children should be: active; practicing skills they haven't yet mastered; learning something new or learning to apply their knowledge to different contexts. They should be: 'doing' very quickly; working at a good pace and being productive; sharing their thoughts and methods and being successful.

Maths lessons are timetabled in the morning session for a minimum of 2 lessons per week and 1 lesson per week during the afternoon session. Children also engage in daily interventions to develop mathematical skills.

ASSESSMENT and RECORDING

Assessment for learning should occur throughout maths lessons, enabling teachers and teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular.

Pupils should regularly self-assess against the learning objective, giving them a sense of success. Children should know when they are meeting their targets and be self-assessing against those too.

Pupil's work should be marked in line with the TMBSS Marking and Feedback Policy and should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods.

Future lesson plans should depend on individuals' success evaluated through marking and observations made during the lesson.

All pupils complete a baseline assessment on arrival at TMBSS, this will be used to inform teaching and learning. Summative assessments are then completed once a term, in order to provide further understanding of the level a pupil is working at and to inform a more rounded judgement of their abilities.

In addition to these assessments, teacher's will make judgements of individual pupil attainment using a variety of evidence:

- observing pupils working
- listening to and questioning pupils
- discussing pupil's work

All Key Stage 2 classes complete a daily '5 Minute Maths' intervention, which is designed to improve mental calculation. For most pupils, this focuses on recall of multiplication and division facts, differentiated for individual ability. As part of this intervention, pupils complete a termly assessment to determine their starting point. Children who are significantly above access the 'Big Maths' intervention. Children working significantly below the 5 Minute Maths baseline complete a similar activity which focuses on developing addition and subtraction skills.

MONITORING AND EVALUATION

This is achieved by the Maths coordinator through;

- monitoring and evaluation of pupils' work;
- lesson observations;
- monitoring of planning and assessment folders.
- Analysis of data

MARKING WORK

The purpose of marking is to move children forward in their learning.

Feedback and marking should be part of a process in which children need to have some involvement. Written or verbal comments made by the teacher should not only link back to the learning objectives, but should also give advice/suggestions/clues on how to "close the gap". It should set the next steps for learning on how to improve their work.

At the Primary Phase in depth marking, e.g. comments or next steps to improve work, should be given on average once per fortnight. For further guidance and detail on marking, please refer to TMBSS Marking and Feedback Policy.